Meeting Report

review of the International Cross-Industry Safety Conference (ICSC) 2017

Author(s)
Karanikas, Nektarios; de Boer, Robert J.

DOI
10.1027/2192-0923/a000139

Publication date
2018

Document Version
Author accepted manuscript (AAM)

Published in
Aviation Psychology and Applied Human Factors

Accepted version. Published version at https://doi.org/10.1027/2192-0923/a000139

Review of the International Cross-Industry Safety Conference (ICSC) 2017

Nektarios Karanikas and Robert J. de Boer

The Amsterdam University of Applied Sciences organised the 2nd International Cross-Industry Safety Conference (ICSC) in Amsterdam (November 1–3, 2017), dedicated to both practical and theoretical aspects of safety. The conference, which was supported by the International Civil Aviation Organization (ICAO), functioned as a platform to disseminate and share knowledge and experience about safety within and between industry and academia. The event was attended by more than 85 delegates from the industry and academia who enjoyed the fruitful discussions and debates in a friendly and hospitable environment.

During the 1st successful launch of ICSC in 2016, it was confirmed that there are plethora of approaches to safety, respective models and management methods that have been proposed by the academia. Also, various "best practices" are applied across industry sectors and are included in standards and regulations. However, although the diversity of models and approaches serves the scope of science, when it comes to practice it does not allow the establishment of a lingua franca regarding safety. It has been observed that academics often focus on problems that the industry is not highly concerned with, and the industry is not always knowledgeable about research results that can be used to solve safety-related problems. Moreover, even best practices are not widely shared across different industries, despite the fact that safety is one of the focal points for all domains.

The ICSC 2017 proved to be a unique opportunity to bring together various industry sectors and the academia. The event featured keynote speeches by Dave Snowden (Founder and Chief Scientific Officer at Cognitive Edge) and Ewout Hiltermann (Safety & Compliance Director at KLM Cityhopper). Besides the keynote speakers, 21 delegates from various industry, academia and (inter)governmental organisations delivered their presentations and discussed with the attendants a wide range of practical applications and research results. During the first day of the conference, three tutorials covered: the achievement of safety leadership through ten workable steps, possible ways to use new safety thinking to increase the depth, fairness and effectiveness of safety investigations, and six novel metrics that could support proactive safety management. All three tutorials were highly interactive, and the instructors demonstrated how theory could be converted to practical and meaningful tools. The material of the six new safety metrics discussed during the third tutorial was also presented with posters in the following days and allowed delegates to be informed and state their additional comments and ideas.

Following an inspiring and thought-provoking talk from Dave Snowden about the complexity of modern socio- technical systems, the human learning process and the role of failures in improving human behaviour, the first day of presentations continued with the position of John Stoop (Kindunos Consultancy, NL). John elaborated on several options for closing the gap between Work-as-Imagined and Work-as-Done and advocated the abolition of several obsolete notions such as human error, accident modelling and linear causality. As he concluded, the focal question to be answered in any attempt to minimise this gap should be: why was it reasonable for operators and managers to decide and act as they did under the given circumstances? Moving to the field of safety leadership, Colin Russell (Baines Simmons, UK) presented ways in which leaders can provide the drive, motivation and encouragement which takes organisations from minimum compliance through to safety performance. In his presentation, Colin outlined some of the safety leadership challenges seen across the aviation industry, and draw out a vision for the next age of safety - the Leaders Age. Konstantinos Stephanou (Estonian Business School, Estonia) presented published research which investigated how

transactional leadership affects safety performance. The study showed that transactional leadership style improved parachutists' safety performance, particularly safety participation behaviours in standardised environments.

In the domain of healthcare, Martin Egerth (Lufthansa Aviation Training GmbH, Germany) stressed out that interpersonal and personal skills must be strengthened for those working with or on patients and a safety culture needs to be introduced. This approach is expected to result in proper error management, a positive working environment and, ultimately, fewer patients dying due to staff fatigue, a lack of assertiveness and hierarchy. Talking about inconsistencies in safety investigations, Ioannis Lainos (former academic, Greece) presented his observations regarding the lack of specific guidance in standards for the investigation of management functions and lack of relevant topics in investigation training programs. The session was closed by David van Valkenburg (Humans@Work, The Netherlands) who through a specific scenario demonstrated how the perspective that an investigator takes during an investigation is a predominant factor that influences the results. David presented four different lenses that can serve as a framework to shift the thinking around incidents, and safety in general, and drive the shift from constructing causes to understanding complex systems.

Ilias Panagopoulos and Ivan Sikora (City University of London, UK) proposed a Quantified Risk Assessment methodology and cost-effective safety system practices for aircraft operators, manufacturers and design organisations through the development of Risk Acceptance Criteria. Next, Emma Verschoor (CGE Risk Management Solutions, NL) talked about the use of the Bow Tie model to map and visualise the common cause and failures of runway incursion incident reports published the past 5 years by 20 safety investigation boards. This approach helped to communicatively illustrate findings which could help airports and airlines to prioritise interventions against major contributing factors in runway incursions. The third conference session concluded with the proposal of Theodoros Morakis (National Technical University of Athens, Greece) about the Safety Risk Avoidance Capability indicator that combines the influence of hazards on a given system and the extent to which hazards can affect the system. The specific approach was seen as more objective compared to the prevalent risk assessment practice which is based on probability and severity matrices.

The first day of presentations ended with two speeches. Maria Mikela Chatzimihailidou (Imperial College London, UK) suggested the COSYCO indicator for comparing system configurations by considering the performance as well as the criticality of each system element, the latter derived by its proximity to the physical process and its connections with other elements. Rob Klees (independent consultant, NL) deployed the reality of different interests of various organisational departments, such as production and maintenance, in comparison with the safety department, and reflected on possible consequences.

The stimulating and practice-oriented speech of Ewout Hiltermann was a great opening for the second day of presentations. Ewout explained how he managed to couple modern safety approaches with existing safety management practices in the company, and how this strategy could infuse new safety and human factors thinking across the organisation. Elizabeth Gnehm from ICAO continued the session by pointing the importance and need to address the interactions between the Safety Management Systems (SMS) of service providers from the same sector as well as such inter- faces between those from different sectors. As Elizabeth claimed, once the SMS interfaces have been identified, the nature of these interfaces should be considered to enable organizations to determine the best mechanisms for identifying hazards and manage the associated risks. The concept of Dynamic Risk Management Dashboards (DRMD) was introduced by Ilias Panagopoulos (NATO Airlift Management Programme, Hungary) as a means to face the challenges of assessing cumulative operational risks and foster a cross-departmental contribution to risk management. He demonstrated the application of DRMD and their value in informing decision-making, especially in high-risk and

dynamic operational environments.

In the next session, Anastasios Plioutsias (Thessaly University of Applied Sciences, Greece) explained the results of a study about the gaps between the domains of safety investigations and project management. The findings suggested that risk, quality, communication and stakeholder management are underrepresented in investigation standards, and most of the areas and activities of project management were perceived as very useful by the study participants. Osiris Valdez Banda (Aalto University, Finland) and Floris Goerlandt (Delft University of Technology, NL) introduced a safety system engineering process for design- ing safety management systems in maritime according to the safety intent specification described in Systems- Theoretic Accident Modelling and Processes (STAMP). The speakers sought that the particular process could also be widely applicable to other problems and/or industries without however neglecting the importance of analysing the context of application. Panagiotis Sotiriadis (Ministry of National Defence, Greece) articulated research per- formed in an aviation organisation and regarded the inter- relationship between flight and occupational safety. The study revealed that the survey participants obtained significant less knowledge about the existence of the occupational safety management within the organisation, a reality that could have resulted from a lack of clarity about the boundaries of each management system.

Cengiz Turkoglu (Cranfield University, UK) opened the third session of the day by introducing the concept of risk culture as a dimension of the overall safety culture. He envisaged that a better understanding of the challenges faced by frontline operators and the factors encouraging risk-taking behaviour would enable the key policy/decision makers in commercial organisations and regulatory authorities to put in place better risk mitigation measures. The next presentation was delivered by Paul de Korte (SAFE- map, NL) who focused on the description of the unique human strengths to respond to threats, the identification of key perceptual failures to recognize risks, the under- standing of the role that biases play in (mis)judging risks, the definition of risk migration, and the path to inspirational leadership. Robbert van Aalst (Amsterdam University of Applied Sciences, NL) suggested a metric that can be used to depict designed or real-time complexity levels in a socio- technical system and which combines factors such as system structure, human perception and system buffers.

The last session of the conference commenced with Robert J. de Boer (Amsterdam University of Applied Sciences, NL) who presented a novel way to identify and make sense of weak signals through short narratives that are coded by the submitter. The findings from a study conducted at a maintenance squadron of the Dutch navy helicopter branch showed a large gap between Work-as- Done and Work-as-Imagined and that the organisation was struggling to achieve acceptable productivity and safety levels. Thomas Hofmann and Malte Syndicus (University of Applied Sciences Osnabrueck, Germany) talked about the importance and value of involving air traffic controllers into a Human-Machine Interaction design process. Through a case study, the speakers showed the challenges of understanding the complexity of operations and prompted the inclusion and integration of the users in system design. Mannat Kaur (Delft University of Technology, NL) closed the final session of the event by presenting a conceptual and computational modelling of coordination mechanisms in air traffic management.

Judging from the variety, content and quality of the presentations we are convinced that this 2nd ICSC was successful and served its intended scope.

We look forward to welcoming you to the next edition of the ICSC in Amsterdam, October 31 – November 2, 2018.